# BEAM POWER AMPLIFIER

## DESCRIPTION

The GL-6005 is a miniature beam-power amplifier intended for use in medium-power audio-frequency applications. The tube is specially designed to assure dependable life and reliable service under the exacting conditions encountered in mobile and aircraft applications. Features include mechanical ruggedization and a heater-cathode construction designed to withstand many-thousand cycles of intermittent operation.

## TECHNICAL INFORMATION

### GENERAL

**Electrical Data**

| | | |
|---|---|---|
| Cathode | | Coated Unipotential |
| Heater Voltage (A-c or D-c) | 6.3 | Volts |
| Heater Current | 0.45 | Ampere |

**Mechanical Data**

| | |
|---|---|
| Peak Impact Acceleration in Any Direction | 600G |
| Vibrational Acceleration in Any Direction | 2.5G |
| Bulb Temperature at Any Point | 250C |
| Envelope | T-5½ Glass |
| Base | E7-1, Miniature Button 7-pin |
| Mounting Position | Any |

Electronic TUBE



## TECHNICAL INFORMATION (CONT'D)

## MAXIMUM RATINGS

### ELECTRICAL (DESIGN CENTER VALUES)

| | | |
|---|---|---|
| Plate Voltage | 250 | Volts |
| Screen Voltage | 250 | Volts |
| Plate Dissipation | 12 | Watts |
| Screen Dissipation | 2 | Watts |
| Heater-Cathode Voltage | 90 | Volts |
| Grid Number 1 Circuit Resistance | | |
| With Fixed Bias | 0.1 | Megohm |
| With Cathode Bias | 0.5 | Megohm |

## CHARACTERISTICS AND TYPICAL OPERATION

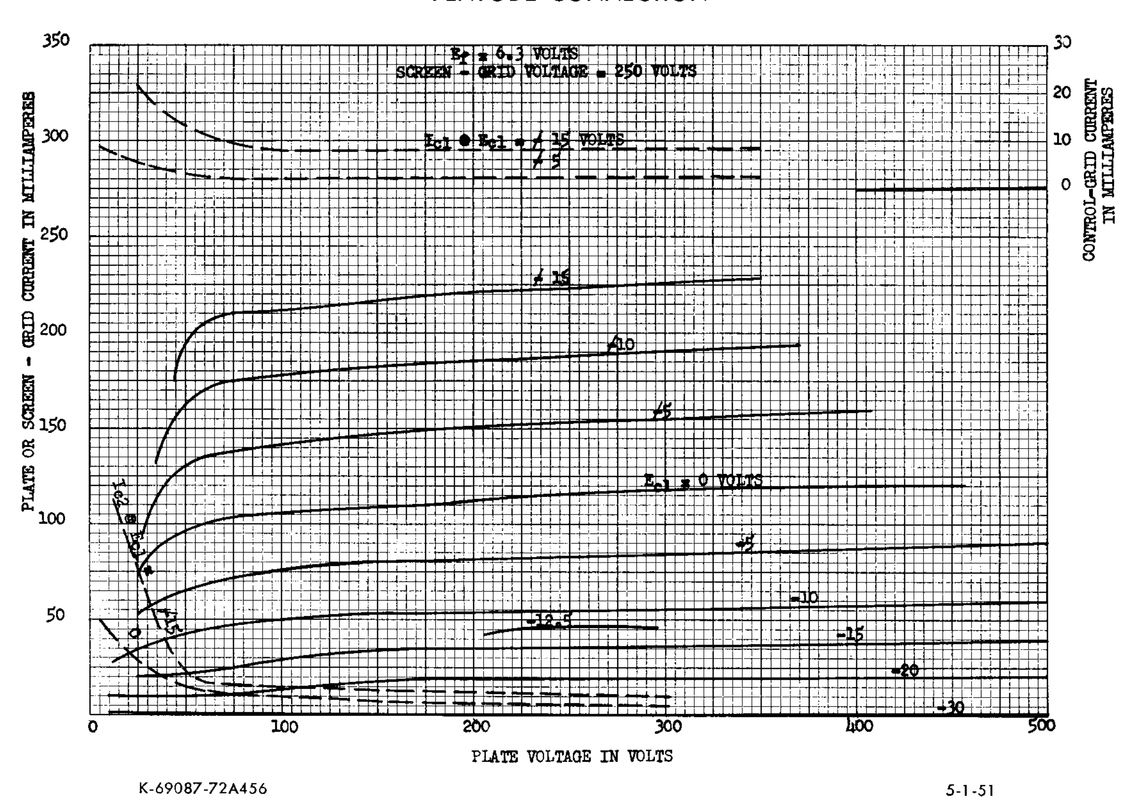
### CLASS $A_1$ AMPLIFIER

| | | | |
|---|---|---|---|
| Plate Voltage | 180 | 250 | Volts |
| Screen Voltage | 180 | 250 | Volts |
| Grid Number 1 Voltage | −8.5 | −12.5 | Volts |
| Peak A-F Grid Number 1 Voltage | 8.5 | 12.5 | Volts |
| Plate Resistance (Approx) | 58000 | 52000 | Ohms |
| Transconductance | 3700 | 4100 | Micromhos |
| Zero-Signal Plate Current | 29 | 45 | Milliamperes |
| Maximum-Signal Plate Current | 30 | 47 | Milliamperes |
| Zero-Signal Screen Current | 3 | 4.5 | Milliamperes |
| Maximum-Signal Screen Current | 4 | 7 | Milliamperes |
| Load Resistance | 5500 | 5000 | Ohms |
| Total Harmonic Distortion (Approx.) | 8 | 8 | Per Cent |
| Power Output | 2.0 | 4.5 | Watts |

### PUSH-PULL CLASS $AB_1$ AMPLIFIER (VALUES FOR TWO TUBES)

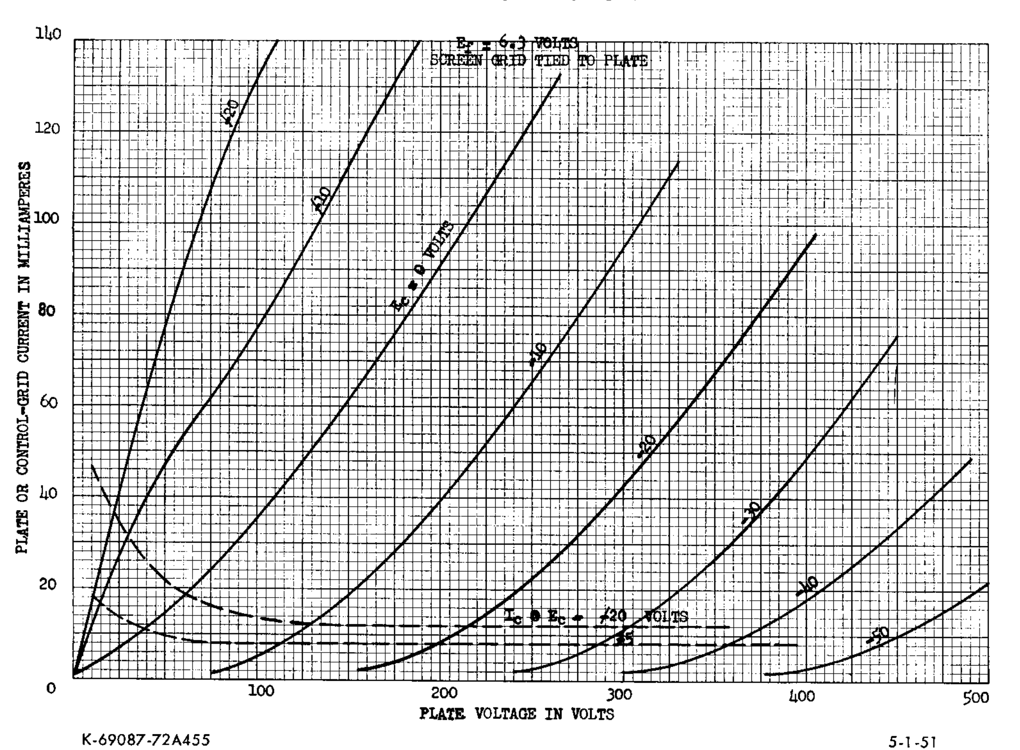
| | | |
|---|---|---|
| Plate Voltage | 250 | Volts |
| Screen Voltage | 250 | Volts |
| Grid Number 1 Voltage | −15 | Volts |
| Peak A-F Grid-to-Grid Voltage | 30 | Volts |
| Plate Resistance (Each Tube) | 60000 | Ohms |
| Transconductance (Each Tube) | 3750 | Micromhos |
| Zero-Signal Plate Current | 70 | Milliamperes |
| Maximum-Signal Plate Current | 79 | Milliamperes |
| Zero-Signal Screen Current | 5 | Milliamperes |
| Maximum-Signal Screen Current | 13 | Milliamperes |
| Effective Load Resistance (Plate to Plate) | 10000 | Ohms |
| Total Harmonic Distortion | 5 | Per Cent |
| Maximum-Signal Power Output | 10 | Watts |

## AVERAGE PLATE CHARACTERISTICS
## PENTODE CONNECTION



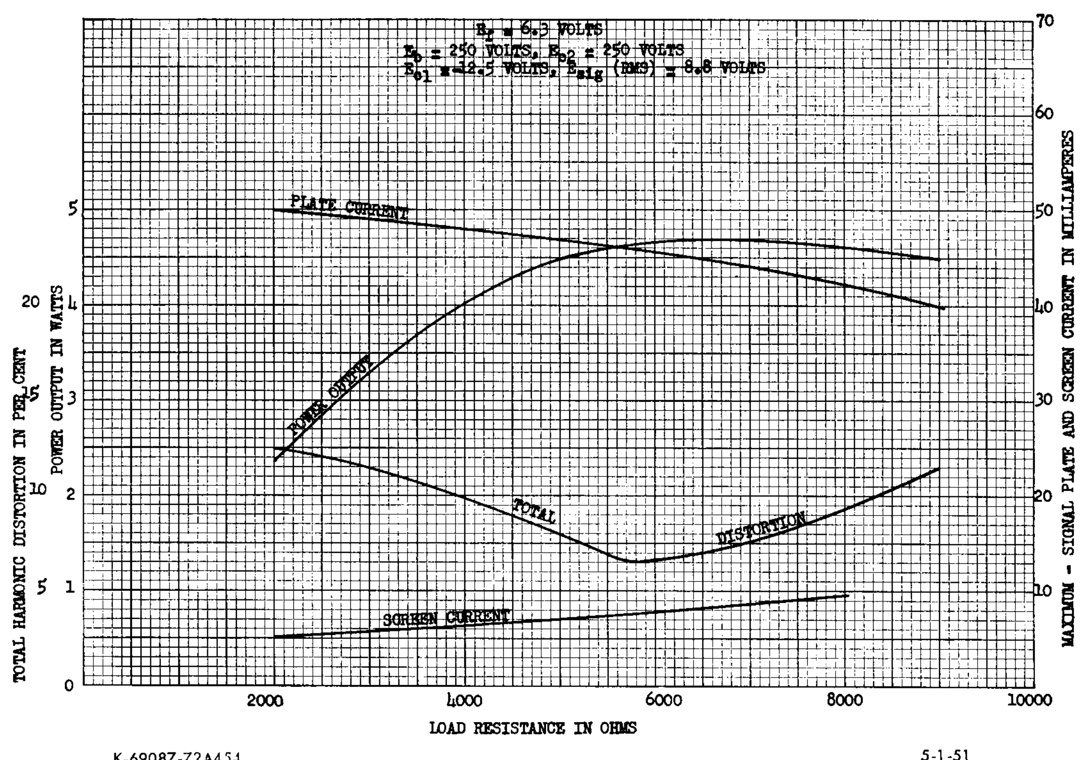

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## AVERAGE PLATE CHARACTERISTICS
## TRIODE CONNECTION



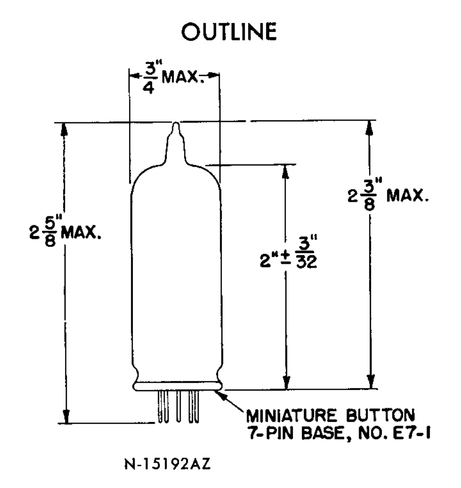

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## OPERATION CHARACTERISTICS
## PENTODE CONNECTION



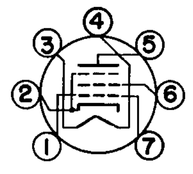

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## OUTLINE




N-15192AZ

## BASING DIAGRAM




**7BZ**

**PIN 1 - GRID #1**
**PIN 2 - CATHODE AND GRID #3**
**PIN 3 - HEATER**
**PIN 4 - HEATER**
**PIN 5 - PLATE**
**PIN 6 - GRID #2 (SCREEN)**
**PIN 7 - GRID # 1**

3-30-51

*Tube Department*




*Schenectady, N. Y.*